DOCUMENT RESUME

ED 169 787 FL 010 282

AUTHOR Donahue, Mavis L.
TITLE Form and Function in Mother-Toddler Conversational Turn-Taking, Occasional Paper No. 5.
INSTITUTION Michigan State Univ., East Lansing. Inst. for Research on Teaching.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Jun 78
CONTRACT 400-76-0073
NOTE 36p.
AVAILABLE FROM Institute for Research on Teaching, College of Education, Michigan State University, 252 Erickson Hall, East Lansing, Michigan 48824 ($1.75)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Child Language; *Communicative Competence (Languages); Comprehension Development; Intonation; *Language Development; Language Patterns; *Language Research; *Longitudinal Studies; *Parent Child Relationship; Phonology; Preschool Children; Psycholinguistics; Semantics; Stress (Phonology); *Suprasegmentals; Syntax
IDENTIFIERS *Turn Taking

ABSTRACT

Most studies of language acquisition overlook the fact that a child learns language in the context of acquiring the social skill of conversing known as "turn-taking." The few studies of verbal turn-taking in children suggest that prosodic features (suprasegmentals) and turn-taking skills are integrated by the age of two years, nine months, and that prosodic patterns may play an important role in calibrating turn-taking. This study sought to determine what happens in the second year of life to facilitate this process. Subjects for this study were four mother-toddler dyads. The children, two boys and two girls, ranged in age from 12 to 19 months at the start of the study. Half-hour samples of each dyad's conversations were audiotaped and videotaped every two to three weeks for seven to nine months. A coding system was devised to categorize utterances within conversational exchanges. Two strategies of conversational turn-taking were discerned among the dyads: (1) one demonstrating that conversation is symmetrical and imitative; and (2) the other indicating that conversation is asymmetrical and complementary. The evolution of these strategies can be described in three phases, involving: (1) conversation-initiating strategies; (2) response-turn strategies; and (3) an increase in the use of function-based response-turns. The study suggests that children learn formal conversational conventions which effectively calibrate the language addressed to them long before the appearance of two-word constructions. (AM)

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Institute for Research on Teaching

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FORM AND FUNCTION IN MOTHER-TODDLER CONVERSATIONAL TURN-TAKING

Mavis L. Donahue

Published By

The Institute for Research on Teaching
252 Erickson Hall
Michigan State University
East Lansing, Michigan 48824

June 1978

The Institute for Research on Teaching is funded primarily by the Teaching Division of the National Institute of Education, United States Department of Health, Education, and Welfare. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education. (Contract No. 400-76-0073)

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FORM AND FUNCTION IN MOTHER-TODDLER CONVERSATIONAL TURN-TAKING[1]

Mavis L. Donahue[2]

Context of the Problem

Since the advent of Chomsky's (1965) theory of generative grammar and its psychological implications, there has been a virtual explosion of research on the formal characteristics of child language. Substantial information on children's emerging knowledge of syntax, semantics, and phonology is now available. As sociolinguistics gradually lost the stigma of a hyphenated discipline, a renewed interest in the acquisition of communicative competence began to surface, i.e., knowledge of the rules of language use.

This framework, amplified by Hymes (1964), focuses on the social acquisition of language as a rule-governed behavior, its overall place within the culture, and its function in the conduct of social life. Thus, a bilingual child who automatically selects the language which is appropriate to his listener (Burling, 1959); the four-year-old who varies the syntactic complexity of his speech to correspond with the age of his listener, e.g., a two-year-old vs. another four-year-old (Shatz & Gelman, 1973); and the black child who chooses to remain silent in the presence of superordinate adults (Talbert, 1969) all demonstrate an aspect of communicative competence.

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[1]This paper is a summary of a dissertation of the same title submitted to Boston University for a doctoral degree in Applied Psycholinguistics.

[2]Mavis L. Donahue, a former IRT research intern, is a research associate at the University of Chicago. She is collaborating in an IRT study of clinical processes in reading.

The speech-act approach (Austin, 1962), which broadens the investigation of linguistic form to include communicative function, treats utterances as the performance of meaningful social gestures. Conversations composed of orderly chains of reciprocal gestures may be described in terms of a speaker's expectations and a hearer's obligations (Schegloff, 1968). To converse effectively, two participants must share not only a linguistic code, but also a code of conduct, i.e., a flexible set of conversational conventions.

These conventions establish certain expectations on the part of speaker and hearer. A speaker may expect a hearer to recognize his utterance as a certain category of talk, e.g., request, warning, promise, demand, suggestion, etc., and to respond in a manner appropriate to that category of talk, verbally and/or non-verbally. Obviously, these expectations are based on a knowledge of social conventions which are generally culture-specific; but the fact that conversational partners alternate between talking and listening may well be a language universal (Miller, 1963). On the basis of this most easily observed characteristic of conversation, Schegloff (1968) proposed the "basic rule for conversation: one party at a time" (p. 1076).

How does the young child become aware of this "rule"? This knowledge is essential for developing communicative competence because turn-taking provides a framework within which the child can become aware of speaker and hearer expectations necessary to the successful performance and understanding of conversation. However, most studies of language acquisition overlook the fact that the child is learning language in the context of acquiring the social skill of maintaining a conversational exchange.

Review of the Literature

Turn-Taking in Adult Conversations

Turn-taking is a prominent type of social organization; each activity, whether a game, debate, or traffic intersection, must have a means for allocating the distribution of turns. How do participants manage the finely calibrated exchange of speaking turns in face-to-face interaction? Several investigators have attempted to abstract the system of rules and conventions underlying these behaviors, positing signals composed of perceptually discrete cues. Kendon (1967) emphasizes the importance of gaze direction in turn-taking. Duncan (1972) found that numerous behaviors were actively involved in turn calibration, especially body motion, prosody, and syntax variations. He describes three basic rules which work together to prohibit conversational breakdown, i.e., both participants claiming turns at once, or neither claiming a turn.

Rule 1: The listener may speak when the speaker gives a turn-yielding signal, e.g., completion of a grammatical clause, decrease in pitch or amplitude, termination of a hand gesture, etc.

Rule 2: Regardless of the number of turn-yielding signals already given, a speaker may maintain his turn by an attempt-suppressing signal, especially a phrase-final rise in pitch of hand gesticulation.

Rule 3: Both participants may briefly verbalize at once, when the listener is communicating in the "back channel" (Yngve, 1970), i.e., avoiding accepting a turn-yielding signal by nodding, murmuring "yeah" or "Um-hmm", or partially repeating a speaker utterance.

Sacks, Schegloff, and Jefferson (1974) also confirm that the turn as a unit is interactively defined.

The Role of Prosody in Turn-Taking

Although the importance of prosody in conversational interaction is often alluded to in research on communicative competence, there has been no careful or systematic investigation of its role. Prosodic features convey pragmatic information in at least two ways: (1) pitch, timing, and intensity mark the emotional state of the speaker, i.e., his attitude towards his message and his listener; and (2) linguistic content like sentence type, syntactic boundaries, focused elements and even word-level stress are indicated by variations in prosody.

Many analyses (Pike, 1945; Crystal, 1969) attempt to treat these two levels of information together. For example, a non-falling final fundamental frequency contour used in a yes-no question, when listing noun phrases, or before a hesitation could all be construed as markers of "uncertainty" or "incompleteness." Difficulties inherent to this kind of analysis are discussed by Lieberman (1970). Besides the fact that attitudinal nuances are probably dialect-specific, even the interactions among primary stress on the word, clause, and sentence level are not well understood. Most importantly, much of this research measured prosodic features through the subjective perceptions of linguists trained in a particular transcription system which assigned levels of pitch and stress to morphemes (Trager & Smith, 1957). Current techniques of objective acoustic measurements have found inaccuracies in these systems (Lieberman, 1965).

Duncan (1972) used the Trager and Smith (1957) scheme for transcribing prosody, specifying three possible terminal junctures--rising, falling, and sustained. In analyses of dyadic conversation, he found that the use of any terminal pitch contour other than the sustained, i.e., ending on an intermediate pitch level which is neither rising nor falling, constituted a turn-yielding signal. Thus, a rising or falling final pitch contour indicated the listener was free to begin speaking. Sacks and Schegloff (1974) discuss rising intonation as a "trymarker," i.e., a speaker's attempt to elicit feedback from his listener.

In a systematic analysis of classroom interaction, Gumperz and Herasimchuk (1973) compared conversational exchanges between teacher and child with similar exchanges between child-peers. They found a prosodic and rhythmic relatedness in the peer exchanges which was lacking in the teacher-child conversations. For example, the children used repetition of a child-partner's utterance with identical prosodic contours to mark confirmation or agreement. Repetition of an antecedent turn with contrasting prosody marked a question or challenge. More complicated prosodic exchanges occurred also, serving the same functions of the teacher's more extensive use of lexical and rhetorical devices. The authors conclude:

> We would like to suggest that the prosodic component encompassing stress, pitch, and timing along with speech features usually termed paralinguistic is as important in interpreting the meaning of interactional exchanges as referential meaning or propositional content and that it functions to maintain and control interactions in somewhat the same way as the co-ordination of gestures, facial movements, eye blinks, etc., described in the recent literature on kinesics. (p. 111)

Thus, preliminary evidence shows prosody is used to initiate, maintain, and calibrate conversational exchanges. In light of the many discussions in child language literature which point to the perceptual salience and

early use of suprasegmentals in young children (Crystal, 1973), this prosodic marking or turn-taking could be extremely powerful in explaining the child's development of turn-taking skills in particular, and communicative competence in general.

Turn-Taking in Child Conversations

Given the apparent complexity of the knowledge necessary to performing an effective talk-exchange, Piaget's (1926) claim that children are unable to cooperate in sustained, cohesive conversations is easy to accept. Decentration appears to be a prerequisite to achieve the mutual calibration of turns and the speaker/hearer expectations that characterize a verbal dialogue. However, these views have been recently challenged. That both verbal and non-verbal interactions between mother and infant appear to have conversation-like form has been noted by several investigators (Bateson, 1971; Lewis & Freedle, 1973; Bruner, 1975). Bateson termed interactional sequences between a mother and her three-month-old child "proto-conversations," since there was nearly constant visual contact and intermittent and alternating vocal contact. This concept of conversation focuses on what Malinowski (1936) calls "phatic communion", i.e., the importance of vocal exchange in affirming contact rather than on content or information exchange.

Keenan (1974) also provides counterevidence to Piaget's notion of egocentric speech with observations of early morning conversations between twin boys, aged two years and nine months. These children not only responded to one another's utterances over 90 percent of the time, but sustained a coherent dialogue. Closer examination of conversational skills revealed preschool dyads (3½ to 5½ years) successfully convey and interpret verbally

encoded social messages, while skillfully sustaining conversational interaction (Mueller, 1972; Garvey & Hogan, 1973).

Thus, even young children are sophisticated turn-takers in social and verbal behavior with peers; they are aware of the expectations and obligations involved in participating in alternating behaviors in several domains. Shatz (1974) found evidence of an apparently sophisticated sequencing role when examining children's comprehension of indirect requests. Two-year-olds responded appropriately to about half of the directives given them by their mothers, both questions and imperatives.

These directives ranged in explicitness from "Put the airplane up here" to "Can you shut the door?" to "Are there any more toy suitcases?" Degree of explicitness did not seem correlated with comprehension: imperatives and question directives evoked an equal percentage of appropriate responses. Questions were differentially comprehended only in the sense that the children sometimes responded with a verbal response "yeah" in conjunction with the appropriate action, indicating awareness that questions oblige one to answer.

Even younger children (19 and 20 months) did not respond differentially to questions vs. imperatives. An appropriate response to a directive like "Are there any more toy suitcases?" hardly allows one to infer to the child an ability to relate a literal meaning to a non-linguistic context and consider speaker/hearer obligations. Instead, Shatz posited an action-oriented conversational framework between mother and child whose function is to sustain meaningful contact. The child's understanding of his obligations in the exchange tells him to listen to the mother's speech, focus on an element which in conjunction with the non-verbal cues suggests a familiar action schema, and then take his turn in the interaction.

This sequencing framework of communication between mother and child is important in the child's task of learning to map the language he hears to the non-linguistic world of actions and objects. Models of orderly, sequential conversational networks are available to the toddler because his first conversational partner was already a sophisticated interlocutor willing to take the lion's share of responsibility for maintaining exchange. That the infant can appear to be taking his turn allows him to take advantage of a caretaker's eagerness to infer meaning, or at least systematicity, to his behavior.

Prosody in Children's Conversational Turn-Taking

Despite the large body of literature available on non-segmental phonology in language acquisition, no definitive analyses have been presented on any level; the problems inherent to this kind of research are discussed by Crystal (1973) in his comprehensive review. The relationship between prosody and syntax in language acquisition has been a recent source of controversy (Braine, 1963; McNeill, 1966; Ingram, 1971), but claims on both sides of the issue remain speculative. Dore (1974) now posits that the contrastive unit of child prosody is not the sentence, but the speech act; however, he does not systematically analyze these units as turns in a communicative exchange. While suggesting directions for future research in this area, Crystal (1973) speculates:

> Intonation is obviously an important mediating factor in many interaction situations: for example, in a three-element pattern of (a) child's utterance..., (b) parent's response, and (c) child's further response, the nature of (c) will be very dependent on the intonation of (b), whatever the syntax of the various utterances. (p. 30)

How can prosodic characteristics be incorporated with conversational turn-taking? From the studies of peer turn-taking behavior, it appears that at least three processes must occur before actual turn-taking behavior can be established: identification of the units of social or verbal interaction; imitation and subsequent systematic variation of a unit of interaction, i.e., turn which leads to sequencing behavior; and awareness of intentionality, i.e., that partners in an exchange share certain expectations and obligations. Children's use of prosody in conversational exchanges can also be described in terms of this progression.

By the beginning of the second year of life, children have identified the basic prosodic patterns available as turn-taking options. Infant speech perception studies using the habituation-dishabituation paradigm reveal that infants can discriminate changes in fundamental frequency at several levels. Morse (1972) found that one-month-old infants could discriminate rising and falling fundamental frequency contours. Somewhat older infants respond differentially to angry vs. friendly, familiar vs. unfamiliar, and male vs. female voices (Kaplan & Kaplan, 1970). Eight-month-old infants could distinguish between statement and question versions of the spoken utterance "see the cat" (Kaplan, 1969).

From birth the child also produces a repertoire of different vocalizations. Tonkova-Yampol'skaya (1969) found "assertion-like" utterances which rise gradually and then fall in fundamental frequency and intensity used by two-month-old infants. By seven months, "request-like" patterns emerge, characterized by rising final pitch contour. Sharply rising and falling fundamental frequency and intensity patterns

(resembling "commands") are heard during the tenth month. Shirley (1931) observed that infants between 10 and 11 months

> Jabbered in 'sentences', combining several incomprehensible 'words', and uttering the assertion, interrogative and exclamatory inflections...Such conversational jargon was carried over and mixed with early comprehensible speech. (p. 51)

Sequencing through imitation and modification of a unit is specifically addressed by Keenan (1974) in conjunction with "focusing"--an important strategy of the twin boys in maintaining conversational exchanges. In fulfilling the obligation of taking his/her turn, each child would identify a constituent of an antecedent turn and either repeat or modify it slightly by expanding it syntactically or embedding it within a larger construction. In either case, the prosodic shape of the antecedent turn was either imitated or altered in a systematic way. All of these options occurred whether the children were producing semantically coherent turns or exchanges of nonsense syllables in sound play.

Garvey (1974) found similar turn-taking patterns in an analysis of social play in pre-schoolers. Paradigmatic turn patterns, more frequently used by younger children, were imitative and cyclical, marked by identical rhythm, intonation, and volume:

"Bye mommy"	"Bye mommy"
"Bye daddy"	"Bye daddy"

Older children more often chose syntagmatic or truly reciprocal turn patterns, in which the second turn is complementary to the first. Thus, the prosody is altered between turns, but a unit consisting of more than one turn could be reproduced with identical prosodic interactions:

"I have to go to work." "You're already at work"
"No I'm not.
"I have to go to school." "You're already at school."
"No I'm not."

Finally, these studies also indicate that children modify the prosodic shape of their utterances as a function of the expectations and obligations shared by the conversational partners. For example, Keenan found that turn sequences could be isolated which differed in terms of the obligations each imposed on the hearer. The egocentric speech of one twin would often be interrupted by the other bored twin, who would produce a question of directive requiring an acknowledgment; this obligation was always fulfilled. More complicated examples were given by Gumperz and Herasimchuk (1973).

Prosodic Characteristics of Mothers' Speech to Young Children

Recent studies of mother-child interaction show that speech directed to young children systematically differs from speech directed to adults (Phillips, 1973; Snow, 1972; Broen, 1972). Mothers' utterances to children are slower, shorter, and syntactically and semantically simpler. This "baby-talk register" (Ferguson, 1964) is rich in redundancies and repetitions and contains relatively few disfluencies. These combined characteristics create an apparently optimal language-learning environment for a young child.

In a controlled experimental study, Garnica (1975) found several prosodic characteristics of mothers' speech to two-year-olds which differed from their speech to adults. These were:

1. Higher average fundamental frequency (pitch) and frequency range;
2. Much greater frequency of rising utterance-final pitch in sentences, regardless of grammatical form;

3. More cases of sentence units marked by more than one primary stress;

4. Longer duration of certain content words.

Garnica suggests that these prosodic differences serve two functions in facilitating language development--an analytic and a social function. Rising pitch, more primary stress markings, and longer durations of content words assist the child in his task of perceptually segmenting speech into sentences, constituent structures, important words, etc.

The social function of initiating and maintaining conversational exchanges between adult and child may be equally served by these distinctive prosodic characteristics. Higher pitch and exaggerated pitch peaks in stressed syllables may play a role in focusing and maintaining the child's attention. The predominance of rising terminal contours may serve as a turn-yielding device, since it cues the child as to <u>when</u> he/she is expected to take his/her turn and also imposes a greater obligation to respond than an utterance marked by falling terminal contour.

<u>Summary</u>

The few studies of verbal turn-taking in children (which start at age two years and nine months) suggest that prosodic features and turn-taking skills are already integrated to promote successful conversations. The question posed here is: What happens during the second year of life to facilitate this linguistic and social feat? Although no study has been done which systematically explores the form and function of prosody in conversational exchanges, the research discussed previously suggests that prosodic patterns may play an important role in calibrating turn-taking.

The distinctive characteristics of prosodic input to young children could provide a framework for learning to initiate and maintain conversational exchanges. We know that mothers treat their children as conversational partners from the first months of life. And although there is no exchange of information in these verbal and non-verbal interactions, they do preserve conversational form and rules (Bateson, 1971; Lewis & Freedle, 1973; Snow, 1977).

Thus, it is not surprising that children's early conversational turn-taking strategies with peers are based on form and ritual rather than on communicative intent (Keenan, 1974, Garvey, 1974). The term "phatic communion," which Malinowski (1936) defines as "a type of speech in which ties of union are created by a mere exchange of words," and "whose principal aim is to fulfill a social function," is perhaps a fair description of mother-toddler verbal interaction.

Method

Subjects for this study were four mother-toddler dyads who volunteered to commit themselves to the eight-month involvement required for a longitudinal study of this sort. At the onset of the study the children were just beginning to use recognizable words, by the end of the observation period, all four children were producing some two-word utterances. There were two boys, Sean and Jeremy, and two girls, Katie and Rachel; all but Katie were first-born. When the study began, Sean was 19 months old, Jeremy was 13 months old, Katie 12 months, and Rachel 14 months. The four mothers were college graduates and spoke dialects of English characteristic of the northeastern United States.

Half-hour samples of each dyad's conversations were audiotaped and videotaped about every 2 to 3 weeks for 7 to 9 months. Each dyad was left alone in a sound treated and carpeted observation room with a one-way glass. The room was well stocked with toys and snacks. Mothers were told that they were involved in a study of language development and encouraged to interact with their children as normally as possible. Katie was observed for 18 sessions, Rachel for 17 sessions, and the boys for 13 sessions each.

The unit of analysis, the conversational exchange, was defined as a sequence of at least one utterance-turn for each member of the dyad which does not contain a change of topic. A turn is thus defined as any utterance bound on at least one side by another's utterance, e.g., $M_1C_1 \ldots M_nC_n$. A child-utterance was identified as a change of topic if it was accompanied by discrete, non-verbal behavior indicating a shift in the child's attention, e.g., pointing, holding up an object, moving away, etc. Conversational exchanges were isolated from careful transcripts of the audiotapes and in conjunction with the videotapes. The prosodic (suprasegmental) form of each utterance was described perceptually and verified using narrow-band spectrographic analysis.

A coding system was devised to categorize utterances within conversational exchanges according to their relation with the antecedent turn. Mothers' utterance-turns and children's utterance-turns are described similarly. When one partner makes an initiating utterance, the other has two options: (1) of attending primarily to the segmental or suprasegmental FORM of the other's utterance through imitation or modification;

or (2) of guessing at the FUNCTION or communicative intent of the utterance. In the following example, both mother and toddler reproduce their partner's previous turn with the identical prosodic shape:

M: Here's the bear

C: ba:

M: Bear

In the next example, both mother and toddler produce contrastive intonation on the same segmental form:

C: kwakwi

M: Ice cream

C: kwakwi

In similar examples, both partners ascribe communicative intent to the other's utterance and respond with function-based turns. Conversations between adults are generally composed of this kind of turn.

M: Here's the bear

C: mu:

M: No, the cow says moo, not the bear

C: (pretending to eat from toy bowl)

M: What are you eating?

C: kwakwi

M: Yeah, ice cream does come in a bowl like that, doesn't it

Results And Discussion

Although all four mother-toddler dyads use each coding option, a comparison of the relative distributions of use delineates two distinct interaction patterns. Two strategies of conversational turn-taking are used by the four dyads: (1) one demonstrates that conversation is symmetrical and imitative; and (2) the other indicates conversation is asymmetrical and

complementary. These two strategies resemble the turn-taking patterns Garvey (1974) found while examining social play of pre-schoolers, i.e., paradigmatic and syntagmatic. The evolution of these two conversational turn-taking strategies is best described in three phases.

Phase I

The girls and their mothers operate under the principle that conversation is symmetrical. In order to fulfill your conversational obligations in this system, you imitate exactly the form of your partner's initiating turn. As shown in Figures 1 through 4, the conversational exchanges in the first 6 or 7 sessions of the girls and their mothers are characterized by form-based response-turns. Fewer than 30 percent of the mothers' response-turns ascribe communicative intent to the children's initiating turns. And more than two-thirds of the girls' form-based response-turns imitate the prosody of the mothers' initiating turns.

Especially interesting is that a child will occasionally impose the entire sentence intonation of her mother's antecedent turn on her own babbled utterance.

(1) M: My dress is red (reading from picture book)

C: madɛ: gayɛ y

Similarly, mothers are willing to treat babbled utterances or jargon as conversational turns and even involve them in the imitative routines.

(2) C: d^ wadi:

M: duh—wa—dee

These strategies result in long exchanges of co-operative sound and word play in which final rising fundamental frequency contours elicit response-turns with final rising fundamental frequency contours: and final falling

contours elicit final falling responses.

3) C: tyityi
M: Kitty
C: tyityi
M: Kitty
(exchange continues for 5 more turns)

4) C: ʌʔow
M: Uh-oh
C: ʌʔow
M: Uh-oh
C: ʌʔow

However, this dichotomous coding system fails to capture the prosodic harmony of these fugue-like exchanges. From perceptual comparisons of these turns, they appear strikingly similar in intonation contour, amplitude, and duration. An examination of narrow-band spectrograms reveals how insomorphic the prosodic shapes really are.

An initial examination of the response-turns of the boys and their mothers reveals strikingly different turn-taking patterns. Even the earliest sessions were characterized by the mothers' efforts to ascribe communicative intent to the toddlers' vocalizations. Upon closer examination, it was found that the mothers were producing these function-based response-turns NOT in response to the boys' productions of conventional words, but in response to a class of initiating utterances which can be glossed as "Let us together focus our attention on X."

Although the actual form of these attention-getting or "focus-gimmicks" is idiosyncratic to each child and changes over the one-word period, their function remains constant: to maintain social contact by efficiently initiating conversation with their mothers. Examples range from the use of gestures and distinctive prosodic shapes on babbled utterances to the eventual appearance of numerous variants of "What's this/what's that."

Although there is no evidence of any true communicative intent on the part of the child other than to elicit maternal speech, these focus-gimmicks are almost invariably treated by mothers as requests for object names. For example:

5) C: ʌdɹ
M: What's that
C: dɹ
M: That's the wall
C: ʌsɹ
M: I don't know what you're pointing at
C: Isɛ
M: That's a plug
C: ɛsi ɛsIs
M: That's a microphone
C: ɛsdɹ
M: The ceiling
C: ɛsɹ
M: The light
C: ɛsɹ
M: The mirror

For most of the observation period, these focus-gimmicks have the function of "small talk," or "phatic communion,"--to maintain social contact by initiating conversational exchanges. There is no communicative intent on the child's part to convey information. Because these focus-gimmicks occur from the beginning of the one-word period, are used more frequently than conventional words in early sessions, and are often

accompanied by gesture, they may emerge from what Bates, Camaioni, and Volterra (1975) term the "proto-declarative." This is a preverbal attempt to direct an adult's attention through the use of objects, i.e., by showing toys to interesting strangers. Emerging at about 10 months, this showing behavior is eventually characterized by the child's looking around for objects not within his/her grasp, immediately presenting one, and then awaiting an adult response.

Similarly, Halliday (1975) describes one function of his own child's language at 10 months as the "interactional" or "you and me" function. Its earliest initiating utterance is a form of greeting which "directs attention to a particular object, typically a picture, which is then used as the channel for the interaction." Halliday glosses this form as "how nice to see you, and shall we look at this picture together?" This form also becomes a "what's that" in an interesting sequence. At 13½ months, it is used only for familiar objects whose names the child already knows. Not until 15 to 16½ months is the form used as a demand for a NEW name.

Apparently the use of focus-gimmicks, i.e., the "what's that" strategy, can delineate between two styles of language acquisition. Other researchers have noted that frequent use of "what's that" utterances to initiate conversations is not a strategy used by all children. Leopold (1939, 1949) reported that his older daughter Hildegard never used this strategy, while his younger daughter Karla often did. Only 11 of Nelson's (1973) 18 subjects used variants of "what's that." Those children who did select this strategy began using it from the beginning of the one-word stage, and sometimes before they began to acquire labels for objects (Nelson, 1973; Halliday, 1975; Bates et al., 1975). The two girls in

this study, Katie and Rachel, occasionally asked "what's that" at the end of the one-word stage; it appeared that they were genuinely requesting object labels.

In particular, the use of focus-gimmicks allows the turn-taking patterns of the boys and their mothers to appear asymmetrical; maternal response-turns are complementary to the child's initiating focus-gimmicks. Although the use of focus-gimmicks allows the toddler to control or initiate the conversation, it does not allow him/her to play both positions in the interaction, i.e., to fulfill his/her conversational obligations to respond. Thus, the early conversational exchanges of the boys and their mothers are not generative like the imitative dialogues of the girls and their mothers and are rarely more than two turns long. When the boys DID respond, however, they usually imitated the form of maternal utterances.

A re-analysis of the boys' data was done by separating their conversation-initiating utterances into two categories: (1) focus-gimmicks, or (2) conventional lexical items. Focus-gimmicks make up most of the initiating utterances of both toddlers during the early sessions and gradually decrease in frequency as the use of conventional words increases (see Figure 5).

During the first half of the observation period, the boys' mothers responded differently to focus-gimmicks than to conventional words. Approximately 85% of the focus-gimmicks elicited maternal response-turns based on the inferred function or intent of the child's utterance, and this frequency remains fairly constant across the observation period. However, during Phase I, mothers generally attend to the FORM of the conventional

words as initiating utterances by reproducing the child's utterance with imitative or contrastive prosody, as represented by Figures 6 and 8.

Phase 2

Phase 2 is signalled by the onset of the children's use of a new response-turn strategy, accompanied by a shift in maternal response-turn strategy. The children's new gimmick is a conversation-maintaining device which effectively creates the appearance that the toddlers are appropriately fulfilling their conversational obligations. The children's selection of these conversation-maintaining devices or "place-holders" can be predicted from the turn-taking model which each dyad operated under during Phase 1.

The girls' turn-taking patterns are still symmetrical and based on the form of maternal utterances. The use of form-based respsonses with CONTRASTIVE prosody, i.e., a maternal utterance with a falling fundamental frequency contour is reproduced by the child with a rising fundamental frequency contour (and vice versa), increased sharply during Session 6 for Katie and Session 7 for Rachel (see Figures 2 and 4).

6) M: Put the keys in the bowl
C: bowʌ
M: Yeah, the bowl is behind you
C: abwʌwu:
M: Yeah, it's behind you

7) M: What's in here
C: ba:ni ba:ni
M: Bunny
C: ba:ni

The boys' conversational place-holders, which appear abruptly at the onset of Phase 2, are stereotyped utterances with fixed prosodic shape, e.g., "oh, um-hmm, yeah, all right," and they occur first and most often

following maternal utterances with a rising fundamental frequency contour. These place-holders still allow the turn-taking patterns of the boys and their mothers to appear asymmetrical and complementary (see Figures 7 and 9).

8) C: ^s

M: It's a car

C: ow:

9) C: w^s

M: It's a bear Can you say bear for me

C: ^h^

10) C: m> (holding sunglasses)

M: More More on you or more on me

C: mhm: (nods)

M: You want Mommy to wear them or does Jeremy wear them

C: mhm:

Thus, these place-holders prolong conversational exchanges by minimally acknowledging a maternal utterance in a way which indicates only that the child is aware that he has an obligation to respond. In fact, the frequency of function-based, i.e., genuinely communicative, response-turns for all toddlers remains fairly constant during Phase 2, at about 30 percent. However, the use of place-holders has the EFFECT of providing positive feedback to the mothers.

The boys' mothers treat the "um-hmms" and "yeahs" and "ohs" as meaningful responses to yes-no questions or as encouragements to continue. The girls' mothers interpret the use of contrastive intonation as confirmations or requests for confirmations of maternal utterances. At the onset of Phase 2, when the children's conversational place-holders first appear or first predominate, there is a large increase in all the

mothers' use of function-based response-turns (see Figures 1, 3, 6, and 8).

Throughout the remainder of the observation period, more than half of all the mothers' response-turns ascribe communicative intent to the children's initiating utterances. The ILLUSION that the child is appropriately fulfilling his conversational obligations is sufficient to convince the mothers that a qualitative difference in the children's conversational skills has occurred.

Phase 3

Clearly, the toddlers evolved the use of the "what's that" strategy, the cooperative word play, and the place-holders because these were their only means of participating in the conversation. They had not yet cracked the linguistic code enabling them to play all positions in the interaction. However, at Phase 3, the toddlers's use of function-based response-turns increased greatly. From this point, more than half of the toddlers' response-turns attend to the communicative intent of their mothers' utterances. At the SAME point, there is a large decrease in the toddlers' use of (and need for) conversational gimmicks. Once the toddlers can ELICIT function-based responses from their mothers and RESPOND with function-based responses, conversational gimmicks are no longer needed. At the onset of Phase 3, there is a large decrease in the boys' use of focus-gimmicks as initiating utterances (see Figure 2), and the girls' use of contrastive prosody as a conversation-maintaining device (see Figures 4 and 5).

At this point, the conversational turn-taking patterns can no longer be described as symmetrical or asymmetrical in form; both strategies are

truly reciprocal and adult-like in that communicative intent is exchanged between the conversational partners in both directions. The toddler strategies for acquiring conversational turn-taking aid the child's emerging communicative competence in two ways. To fulfill his/her turn-taking obligations in social interactions with caretakers or peers, the child is soon forced to map the language he/she hears onto the world of actions, objects, and intentions in a non-arbitrary way. This enables her/him to become aware of the speaker and hearer obligations necessary to the successful performance and understanding of conversation.

Although the so-called "one-word stage" cannot be regarded as simply the accumulation of a vocabulary to be later incorporated into sentences, it has not been recognized as the period during which conversational turn-taking skills are acquired. This study suggests that children learn formal conversational conventions which effectively calibrate the language addressed to them long before the appearance of two-word constructions.

Note: Examples of children's speech are represented in the notation of the International Phonetic Alphabet; examples of mothers' speech are represented in traditional orthography.

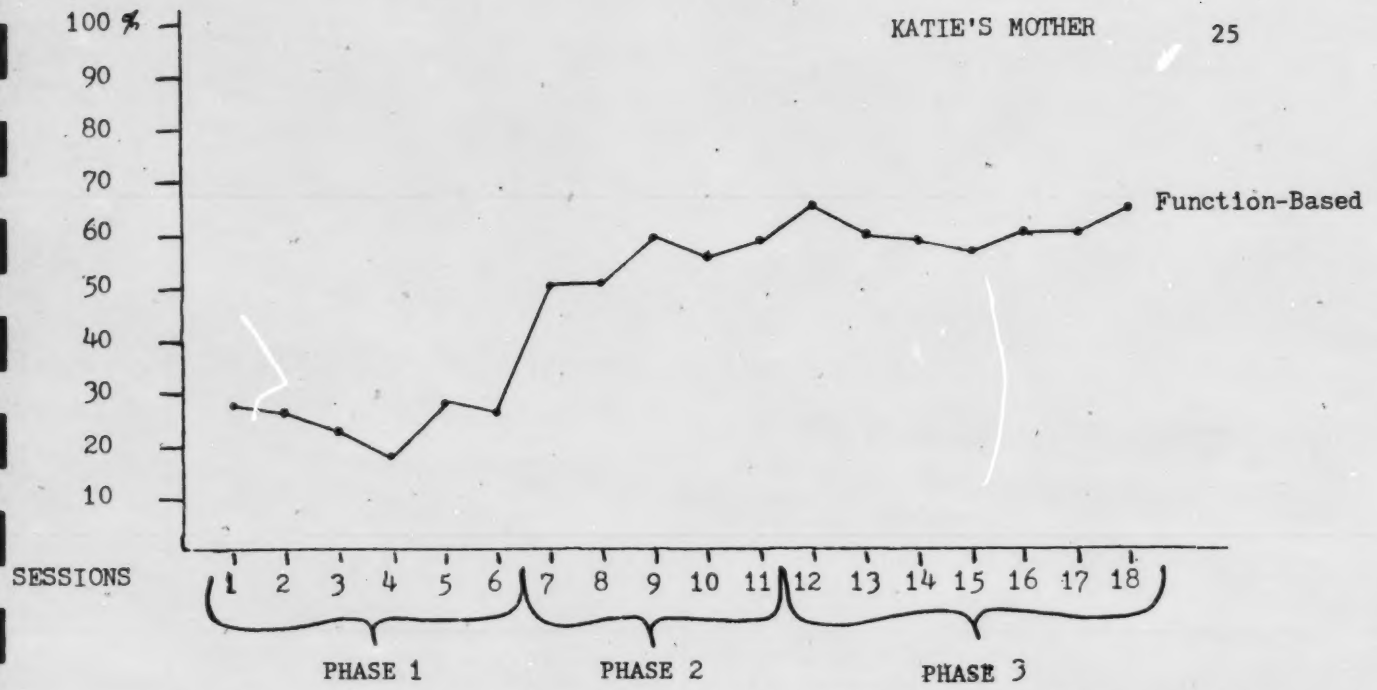

Figure 1: Frequency of Occurrence of Maternal Function-Based Response-Turns. (Katie's Mother)

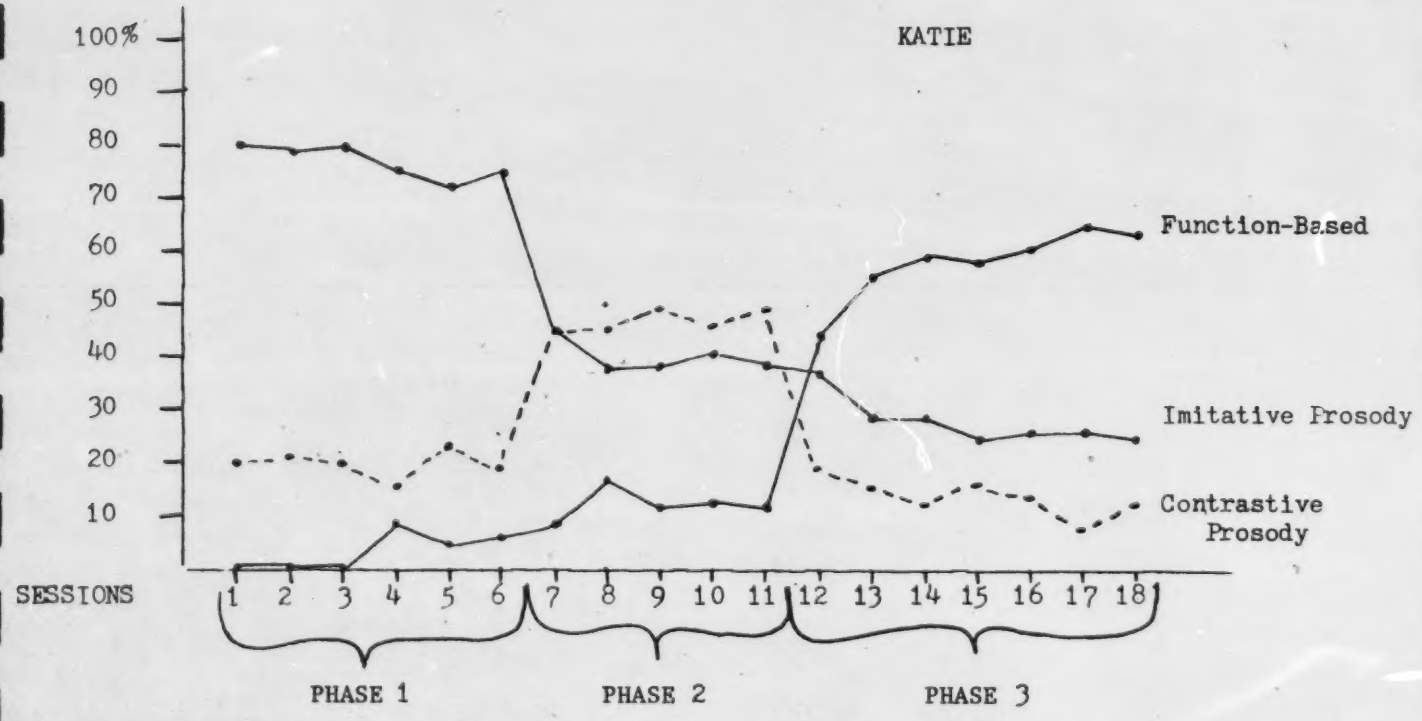

Figure 2: Frequency of Occurrence of Types of Child Response-Turns. (Katie)

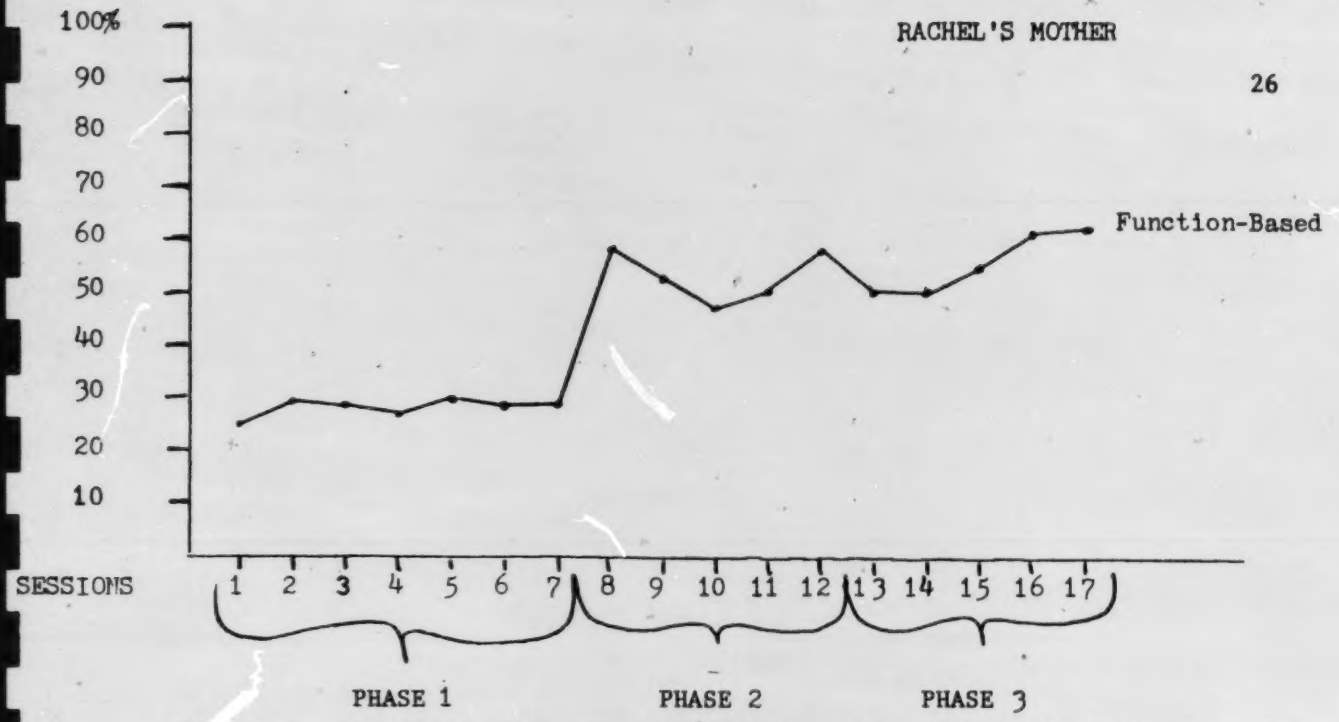

Figure 3: Frequency of Occurrence of Maternal Function-Based Response-Turns. (Rachel's Mother)

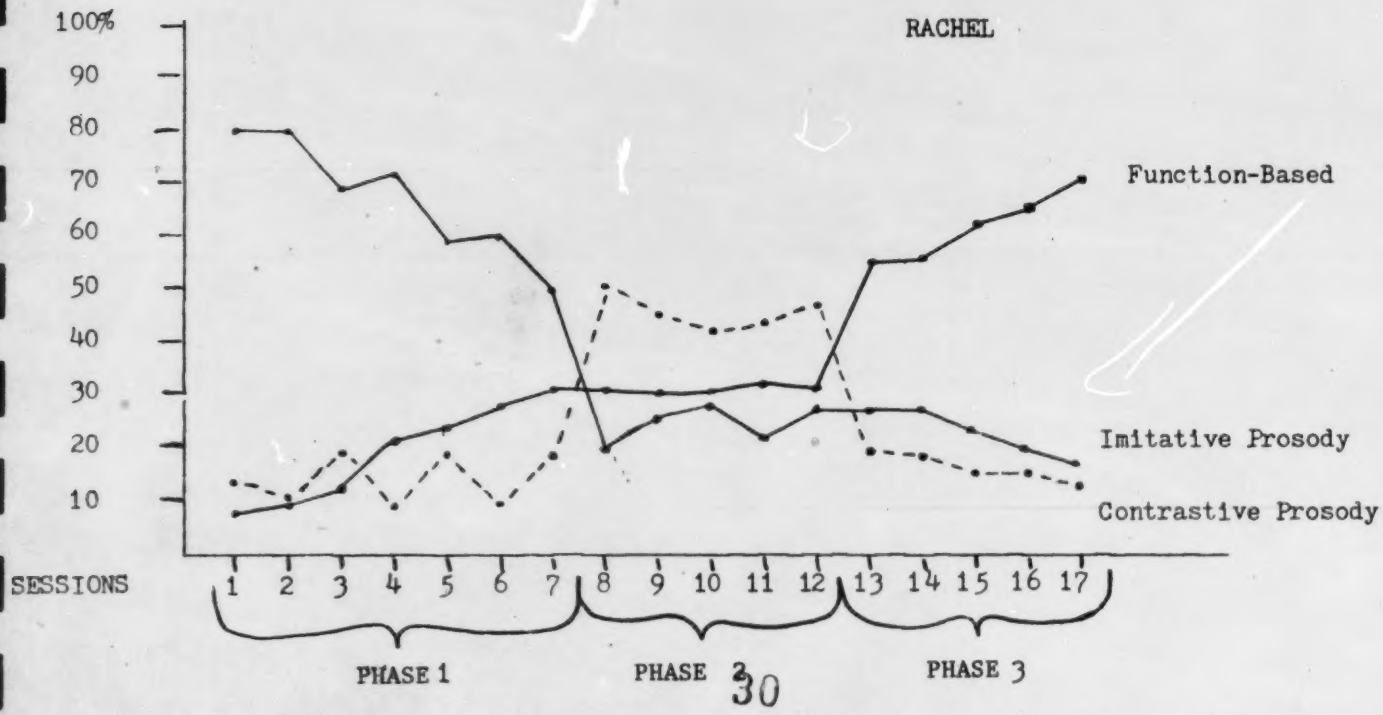

Figure 4: Frequency of Occurrence of Types of Child Response-Turns. (Rachel)

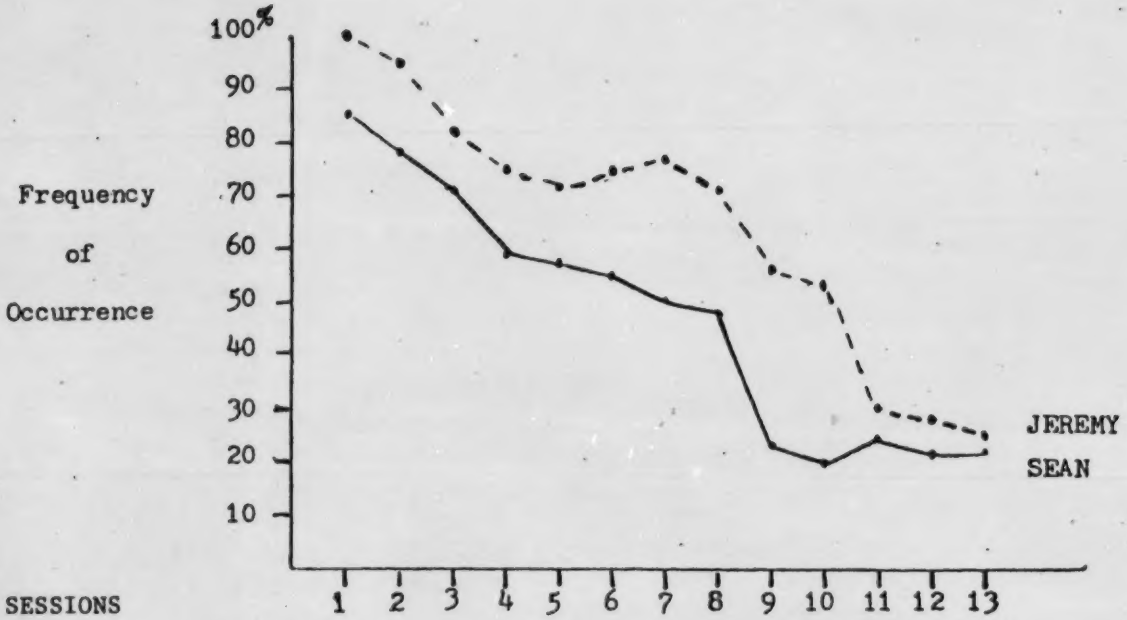

Figure 5: Frequency of Occurrence of Focus-Gimmicks As Initiating Utterances

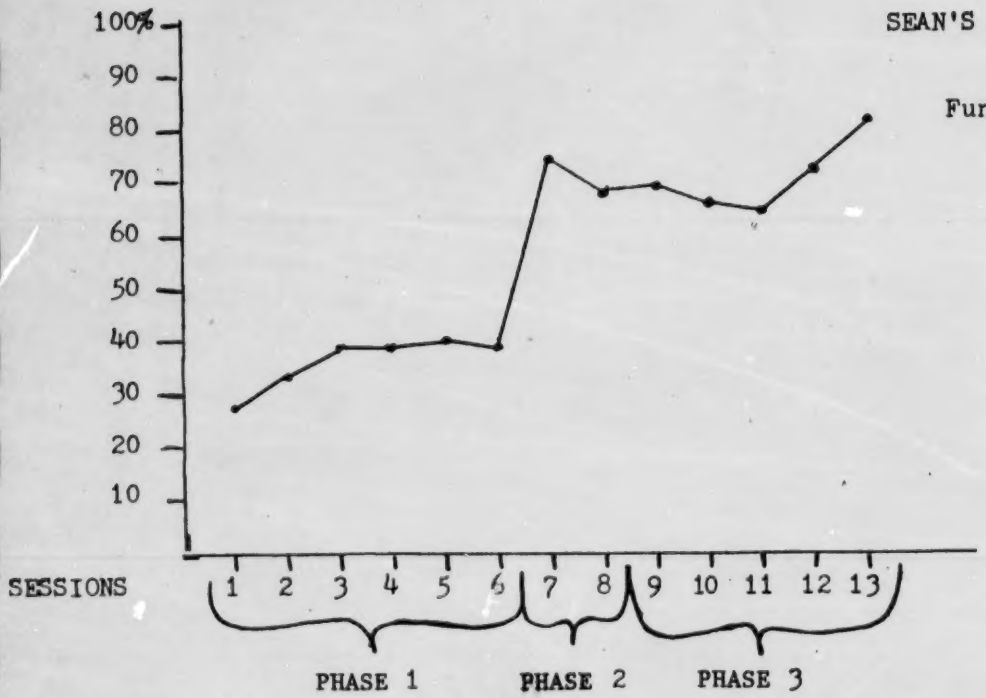

Figure 6: Frequency of Occurrence of Function-Based Maternal Responses to the Child's Use of Conventional Words as Initiating Utterances. (Sean's Mother)

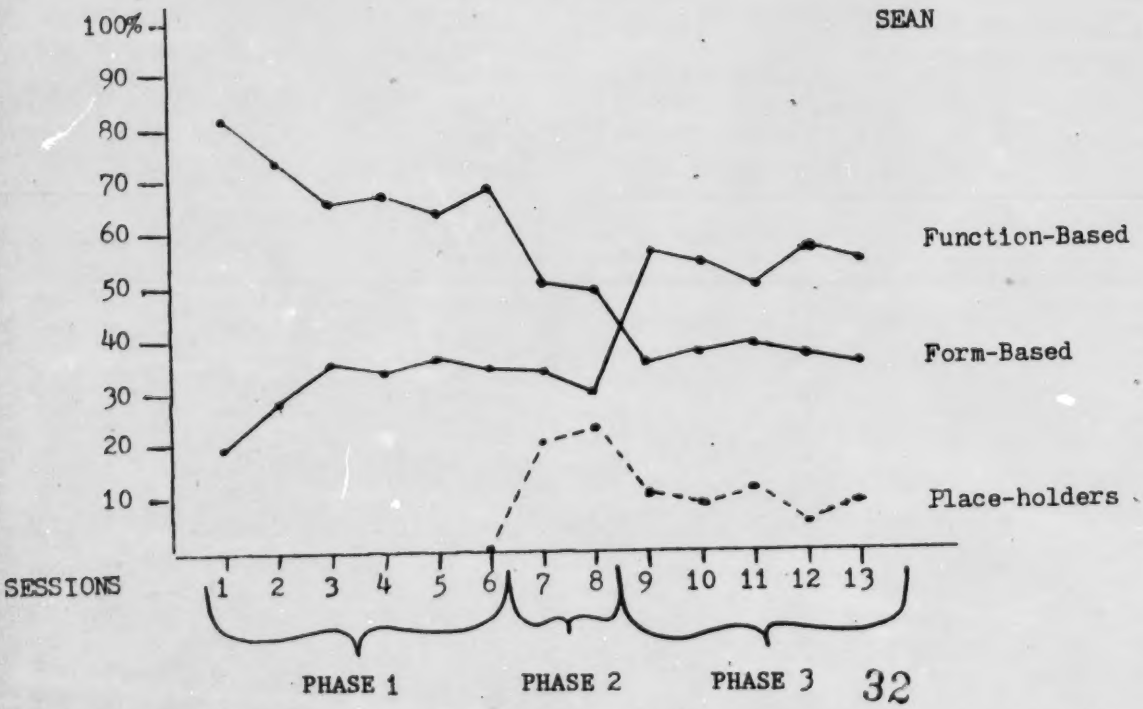

Figure 7: Frequency of Occurrence of Types of Child Response-Turns. (Sean)

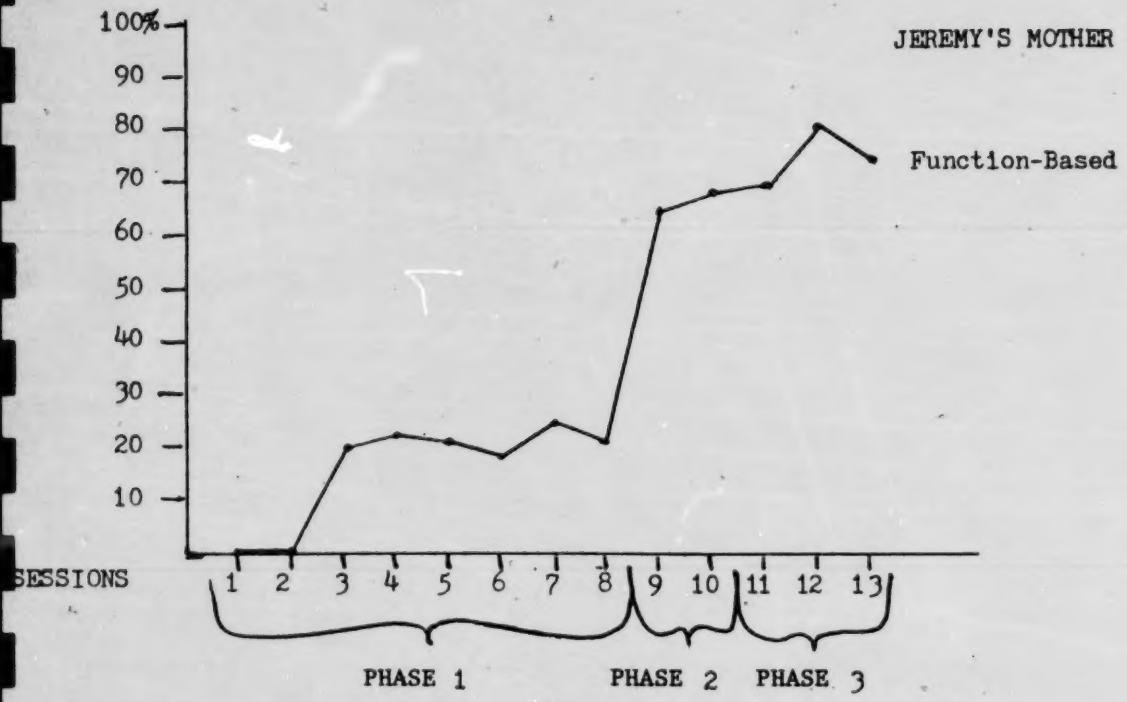

Figure 8: Frequency of Occurrence of Function-Based Maternal Responses to the Child's Use of Conventional Words as Initiating Utterances. (Jeremy's Mother)

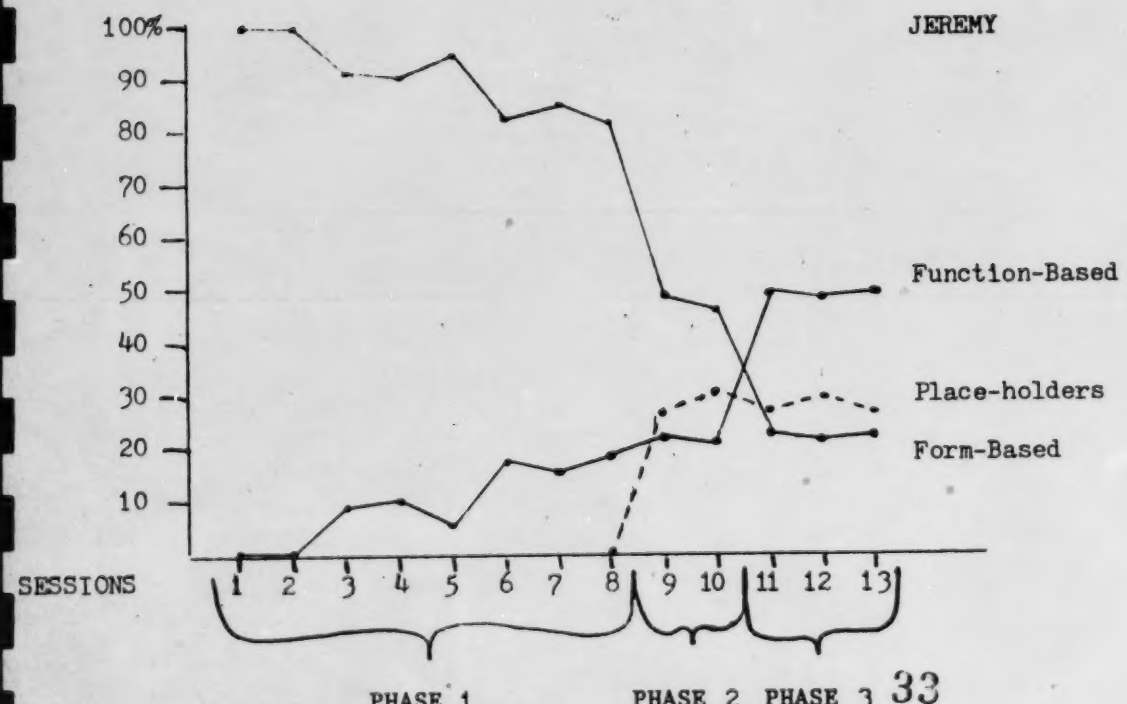

Figure 9: Frequency of Occurrence of Types of Child Response-Turns. (Jeremy)

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